## Summary of Structural Elements for Eastern Busway 2 Stormwater Outfalls

| Outfall | Drawing Exert | Drawing Exert AUP – Chapter E3 Controls (E3.6.1.14) and AUP - E26.3.3.1 NES - Freshwater |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      |                                |  |  |
|---------|---------------|--|-------------------------|------------------|-------------------|----------------------------|-------------------|----------------------------|----------------------------|------------------------------|------------------------|---------------------|----------------------|--------------------------------|--|--|
| Name    |               | Total  | Area of                 | Is stream        | Fish              | 1 per cent                 | Fish Passage      |                            | Mean cross-                | Culvert's                    | Culvert is             | Bed                 | Culvert              | Area of                        |  |  |
|         |               | length of  | vegetation              | disturbance      |                   | annual                     | Provided up       | parallel to                | sectional                  | width                        | open-                  | substrate           | provides for         | vegetation                     |  |  |
|         |               | instream   | clearance               | less than<br>10m | not<br>obstructed | exceedance                 | and<br>downstream | the slope of<br>the bed of | water velocity in the      | where it                     | bottomed<br>or bas its | must be             | continuity<br>of     | within 10m a                   |  |  |
|         |               | structure<br>is less   | proposed within stream  | (excluding       | obstructed        | probability<br>(AEP) flood | downstream        | the river                  | culvert no                 | intersects<br>with the       | or has its invert must | present<br>over the | geomorphic           | wetland for specified          |  |  |
|         |               | than 30m   | riparian                | structure)?      |                   | provided                   |                   | the river                  | greater than               | bed of the                   | be placed so           | full length         | processes            | infrastructure                 |  |  |
|         |               | than com   | margins                 | Structure).      |                   | for.                       |                   |                            | that in all                | river or                     | that at least          | of the              | processes            | (includes                      |  |  |
|         |               |  | 3                       |                  |                   |                            |                   |                            | immediately                | connected                    | 25% of the             | culvert             |                      | mangroves)                     |  |  |
|         |               |  | Area of                 |                  |                   |                            |                   |                            | adjoining                  | area (s) and                 | culvert's              | and stable          |                      |                                |  |  |
|         |               |  | vegetation              |                  |                   |                            |                   |                            | river reaches              | the width of                 | diameter is            | at the flow         |                      | Area of                        |  |  |
|         |               |  | clearance               |                  |                   |                            |                   |                            |                            | the bed at                   | below the              | rate at or          |                      | Earthworks or                  |  |  |
|         |               |  | proposed within coastal |                  |                   |                            |                   |                            |                            | that<br>location             | level of the bed;      | below<br>which the  |                      | land<br>disturbance            |  |  |
|         |               |  | area                    |                  |                   |                            |                   |                            |                            | (w), both                    | bed,                   | water               |                      | outside a 10 m,                |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | measured                     |                        | flows for           |                      | but within a                   |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | in metres,                   |                        | 80% of the          |                      | 100 m of a                     |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | must                         |                        | time                |                      | wetland                        |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | compare as                   |                        |                     |                      | (includes                      |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | follows:<br>(i)              |                        |                     |                      | mangroves)                     |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | (i)<br>where w≤              |                        |                     |                      | Area of                        |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | 3, s ≥ 1.3 ×                 |                        |                     |                      | Earthworks or                  |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | w:                           |                        |                     |                      | land                           |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | (ii)                         |                        |                     |                      | disturbance                    |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | where w >                    |                        |                     |                      | outside a 10 m,                |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | $3, s \ge (1.2 \times 1.06)$ |                        |                     |                      | but within a<br>100 m, setback |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            | w) + 0.6                     |                        |                     |                      | from a natural                 |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | wetland is a                   |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | discretionary                  |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | activity if it—                |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | is likely to                   |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | result, in the                 |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | complete or partial drainage   |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | of all or part of              |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | the natural                    |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | wetland.                       |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      |                                |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      |                                |  |  |
| 06-05   |               | Works  | Approximately           | Works are        | Works are         | Works are                  | Works are in      | No, this is                | There are no               | Not a                        | Closed                 | Not a               | Not a                | The                            |  |  |
| 00 00   |               | are in the   | 1120m <sup>2</sup> of   | in the CMA.      | in the            | in the CMA.                | the CMA.          | not culvert,               | immediately                | stream and                   | bottom                 | culvert,            | culvert and          | construction of                |  |  |
|         |               | CMA.   | vegetation              |                  | CMA.              |                            |                   | this is a                  | joining river              | not a                        | network                | it's a              | does not             | two new                        |  |  |
|         |               |  | clearance               | Resource         |                   | Resource                   | Resource          | network                    | tributaries                | culvert.                     | drainage               | network             | provide for          | stormwater                     |  |  |
|         |               | Resource   | proposed for            | consent not      |                   | consent not                | consent not       | drainage                   | only                       | Twin 750                     | pipe                   | drainage            | continuity           | outfalls will                  |  |  |
|         |               | consent  | the two outfalls.       | required.        | consent           | required.                  | required.         | pipe<br>discharging        | discharges<br>from network | mm                           | discharging<br>to CMA. | pipe and            | of<br>geomorphic     | require the removal of         |  |  |
|         |               | not<br>required.   | outialis.               |                  | not<br>required.  |                            |                   | to CMA.                    | drainage                   | network<br>drainage          | Twin 750               | there is no<br>Bed  | geomorphic processes | approximately                  |  |  |
|         |               | required.  | Resource                |                  | required.         |                            |                   | to oivirt.                 | pipes.                     | pipes.                       | mm pipes               | substrate           | processes            | 4262m <sup>2</sup> of a        |  |  |
|         |               |  | consent                 |                  |                   |                            |                   | Resource                   | Velocities are             | p. p. ss.                    | invert level           | present             | Resource             | mangrove                       |  |  |
|         |               |  | required.               |                  |                   |                            |                   | consent                    | reduced by                 | W = 1.1  m                   | is 250 mm              | 1                   | consent not          | dominated                      |  |  |
|         |               |  |                         |                  |                   |                            |                   | not                        | energy                     | S = 1.728 m                  | above bed              | Resource            | required.            | coastal wetland                |  |  |
|         |               |  |                         |                  |                   |                            |                   | required.                  | dissipation                | Docourse                     | level.                 | consent             |                      | within the                     |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            | measures at<br>outfalls    | Resource consent not         | Resource               | not<br>required.    |                      | Tāmaki River.                  |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            | outialis                   | required.                    | consent not            | required.           |                      | The                            |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            | Resource                   |                              | required.              |                     |                      | construction of                |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            | consent not                |                              |                        |                     |                      | two new                        |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            | required                   |                              |                        |                     |                      | stormwater                     |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | outfalls will                  |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | require the                    |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | disturbance of approximately   |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | 4262m <sup>2</sup> of a        |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | mangrove                       |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | dominated                      |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | coastal wetland                |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | within the                     |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | Tāmaki River.                  |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | Resource                       |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | consent                        |  |  |
|         |               |  |                         |                  |                   |                            |                   |                            |                            |                              |                        |                     |                      | required.                      |  |  |

Summary of Structural Elements for Eastern Busway 2 Stormwater Outfalls

| Summary of Structural Elements for Eastern Busway 2 Stormwater Outfalls  Outfall Drawing Exert AUP - Chapter E3 Controls (E3.6.1.10 and E3.6.1.14) and AUP - E26.3.3.1 NES - Freshwater |               |   |   |   |   |  |  |  |   |  |   |   |   |  |
|---|---------------|---|---|---|---|--|--|--|---|--|---|---|---|--|
| Outfall<br>Name   | Drawing Exert | AUP – Cha<br>Total  | pter E3 Controls (E<br>Area of  | 3.6.1.10 and E3                                       | 3.6.1.14) and A<br>Fish                               | UP - E26.3.3.1<br>1 per cent   | Fish Passage   | Culvert laid   | Mean cross-   | NES - Fre  | eshwater<br>Culvert is  | Bed   | Culvert   | Area of  |
| , tans  |               | length of<br>instream<br>structure<br>is less<br>than 30m | vegetation<br>clearance<br>proposed<br>within stream<br>riparian<br>margins                             |   | passage<br>not  | annual<br>exceedance<br>probability<br>(AEP) flood<br>provided<br>for. | Provided up<br>and<br>downstream   | parallel to<br>the slope of<br>the bed of<br>the river   | sectional water velocity in the culvert no greater than that in all immediately adjoining   | width<br>where it  | open-<br>bottomed<br>or has its<br>invert must<br>be placed so<br>that at least<br>25% of the   | substrate must be present over the full length of the culvert and stable  | provides for<br>continuity<br>of<br>geomorphic<br>processes   | vegetation within 10m a wetland for specified infrastructure (includes mangroves)  |
|   |               |   | vegetation<br>clearance<br>proposed<br>within coastal<br>area   |   |   |  |  |  | river reaches   | the width of<br>the bed at<br>that<br>location<br>(w), both<br>measured<br>in metres,<br>must<br>compare as<br>follows:<br>(i) | diameter is<br>below the<br>level of the<br>bed;  | at the flow<br>rate at or<br>below<br>which the<br>water<br>flows for<br>80% of the<br>time                       |   | Area of Earthworks or land disturbance outside a 10 m, but within a 100 m of a wetland (includes mangroves)  |
|   |               |   |   |   |   |  |  |  |   | where w ≤ 3, s ≥ 1.3 × w: (ii) where w > 3, s ≥ (1.2 × w) + 0.6  |   |   |   | Area of Earthworks or land disturbance outside a 10 m, but within a 100 m, setback from a natural wetland is a discretionary activity if it— is likely to result, in the complete or partial drainage of all or part of the natural wetland.   |
| 89-19   | SANTOWARDS    | Works are in the CMA.  Resource consent not required.     | Approximately 1120m² of vegetation clearance proposed for the two outfalls.  Resource consent required. | Works are in the CMA.  Resource consent not required. | Works are in the CMA.  Resource consent not required. | Works are in the CMA.  Resource consent not required.                  | No – Network Drainage not a Culvert, there is no upstream waterway channels and no fish passage provided  Resource consent not required. | No, this is not culvert, this is a network drainage pipe discharging to CMA.  Resource consent not required. | There are no immediately joining river tributaries only discharges from network drainage pipes. Velocities are reduced by energy dissipation measures at outfalls  Resource consent not required. | Not a stream and not a culvert. Twin 750 mm network drainage pipes.  W = 1.1 m S = 1.728 m  Resource consent not required.     | Closed bottom network drainage pipe discharging to CMA. Twin 750 mm pipes invert level is 140 mm below bed level.  Resource consent not required. | Not a culvert, it's a network drainage pipe and there is no Bed substrate present  Resource consent not required. | Not a culvert and does not provide for continuity of geomorphic processes  Resource consent not required. | The construction of two new stormwater outfalls will require the removal of approximately 4262m² of a mangrove dominated coastal wetland within the Tāmaki River.  The construction of two new stormwater outfalls will require the disturbance of approximately 4262m² of a mangrove dominated coastal wetland within the Tāmaki River.  Resource consent required. |
|   |               |   |   |   |   |  |  |  |   |  |   |   |   |  |